

ON MYCETOPODA FALCATA HIGGINS

BY H. VON IHERING

Mr. William B. Marshall has been led by his study on the microscopic sculpture of the pearly fresh-water shells (Proceedings U. S. National Museum, vol. 67, art. 15, pl. 10, 1925) to the conclusion that the *Mycetopoda falcata* which Simpson erroneously has considered a *Solenaia*, must belong to *Mycetopoda*, or an allied genus. This has been my opinion also for some time, for the reason given below.

Mendranath published a paper on the anatomy of certain Indian Unionidae (Rec. Indian Museum XIV, pp. 109-122, plate 16, 1918) in which according to the Archiv f. Molluskenkunde, p. 48, 1922, he says that *Solenaia soleniformis* Benson, is allied to *Physunio*, and belongs to the *Tetragenæ*. *Solenaia* therefore has nothing to do with the family *Mutelidæ*.

The first exact data on the habitat of *Mycetopoda falcata* we owe to Dr. Fritz Haas of the Senckenburg Museum in his publication "Trabajos del Mus. Nacional de Ciencias Naturales, Madrid Zool. Series, No. 25, p. 57, f. 2, 1916. He there describes *Mycetopoda bolivari*, n. sp., which is evidently identical with *Mycetopoda falcata* Higgins. The specimen of *M. falcata* described by Haas as *M. bolivari* comes from the Rio Unuyacu, an affluent of the Rio Napo, in Ecuador.

NEW FORMS OF PLANORBIS AND LYMNAEA WITH NOTES ON
OTHER FORMSBY FRANK COLLINS BAKER¹

PLANORBIS TRIVOLVIS WINSLOWI n. var.

Shell ultra-sinistrial, discoidal, carinate above and below; color brownish or greenish horn; surface dull, sculpture coarse, the lines of growth forming distinct, wide-spaced riblets; no

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spiral sculpture; whorls about 4, high, closely wound, the body whorl flatly rounded; spire with the first $2\frac{1}{2}$ whorls flat, the body whorl being concave and raised above these whorls; superior angulation very distinct and often sharp; umbilicus round and deep, very small, exhibiting $2\frac{1}{2}$ whorls, the base of the body whorl sharply angulated and roundly sloping into the umbilical region; the vertical striation cuts sharply across the angulated base; aperture ovate, narrowed above where it forms an acute angle raised above the body whorl; broadly rounded below and extending below the body whorl; outer lip sharp, with internal brown-edged callus, reflected and slightly flaring in some fully adult specimens; inner lip forming a thin, spreading, white callus over the parietal wall.

Length, 13.5; diameter, 22.5, aperture length, 12.2; diameter, 8.0 mm. Holotype.

Length, 12.1; diameter, 21.2; aperture length, 12.2; diameter, 7.6 mm. Paratype.

Type locality: Little Arbor Vitae Lake, Vilas Co., Wisconsin.

Types in Mus. Univ. Mich.; paratypes Mus. Univ. Ill., 718637.

Remarks: *Winslowi* is apparently a very distinct variety of *trivolis*. It resembles *pilsbryi* in some respects, but is smaller, only about half the size of adult individuals of that variety, and the body whorl is sharply angulated and more flat-sided. It was at first thought to represent a distinct species, but the presence of individuals varying toward *trivolis* in the type lot, as well as in nearby waters, indicate a relationship to this large planorbis. Specimens from Big Arbor Vitae Lake and from the Manitowish River are of this intermediate character. It was collected by the Michigan fish collectors Messrs. Metzelaar and Langlois. It is named in honor of Miss Mina L. Winslow, the able curator of Mollusca of the University of Michigan Museum, who first brought the novelty to the attention of the writer.

PLANORBIS TRIVOLIS PILSBRYI n. var.

Planorbis binneyi Baker, NAUTILUS, XXIII, p. 41, 1909; Trans. Wis. Acad. Sci. Arts., XVII, p. 237, 1911; Tech. Pub.

N. Y. State Coll. For., 4, p. 277, fig. 46, nos. 17, 18, 1916; Op. Cit., 9, p. 175, 1918.

Shell ultrasinistral, very high as compared with its diameter; whorls $4\frac{1}{2}$, rather tightly coiled, the body whorl with a rather distinct carina above; spire flat and depressed below the level of the body whorl; umbilical region deep, three full turns of the shell visible, the umbilicus small and deep; sutures varying from barely marked to deeply impressed, forming a v-shaped trough; sculpture more regular than in typical *trivolvis*, the riblets more widely spaced; aperture very high, forming a sharp triangle above, widely expanded below, somewhat flaring, but not turned over as in typical *trivolvis*.

Length, 15.0; diameter, 27.5; aperture length, 14.5; diameter, 9.0 mm. Holotype.

Length, 16.0; diameter, 26.0; aperture length, 15.5; diameter, 9.5 mm. Paratype.

Length, 14.0; diameter, 26.0; aperture length, 13.0; diameter, 8.0 mm. Paratype.

Type locality: Tomahawk Lake, Oneida Co., Wisconsin. Types in coll. Baker, 846; paratypes in A. N. S. Phila. 140269.

Remarks: Mature *pilsbyri* differs from *trivolvis* in having higher whorls as compared with their diameter, a deeper and more funnel-shaped umbilicus, a longer and narrower aperture which is more angular above, the upper side of the body whorl (spire) is more sharply carinated, the spire whorls flatter and more regularly and deeply immersed in the coil of the body whorl, and the lines of growth are evenly spaced and heavier, often forming incipient costae. There is some variation in form, this being toward the *trivolvis* form, a variation especially noted in specimens from Moose Ear Creek, Barron Co., Wis. The types from Tomahawk Lake are very distinct and without the intermediate forms of other places would be considered a good species.

The writer previously considered this large corpulent Planorbis as referable to Tryon's *binneyi*. A critical comparison of specimens of *binneyi* from Oregon, the type state, with the large Wisconsin Planorbis shows that this approximation is not correct and that the true *binneyi* is a different species, having a

heavier shell, more heavily carinated body whorl, and especially quite different sculpture, which is coarser than in *pilsbryi*. *Binneyi* occupies a totally different drainage system and probably is related rather to *Planorbis ammon* than to *trivolvus*. *Pilsbryi* is distributed well over the northern part of the United States (and probably southern Canada) from Wisconsin to New York. It seems eminently fitting that this finest *Planorbis* in the northern states should be dedicated to Dr. Henry A. Pilsbry.

STAGNICOLA WALKERIANA n. sp.

Shell ovately globose, inflated, rather thin; periostracum pale horn, darker in many specimens, sometimes tinged with purple; surface dull to shining, lines of growth coarse and close-set, spiral striation well marked: apex wine-colored; whorls 5, rapidly increasing in diameter, inflated, tumid, body whorl rather bulbous; spire short, broadly conic, rather wide; nuclear whorls $1\frac{1}{2}$ in number, flattened, especially the first whorl which is very flat, sunken in the volution of the second whorl in the adult shell, and separated by a deep sutural channel; sutures impressed; aperture ovate or elliptical, sometimes rounded, occupying more than half the length of the shell, with brownish interior; outer lip convex, thin or thickened by a slight brown-edged varix; inner lip flattened, reflected over the parietal wall to form a rather thin callus and raised above the umbilicus forming a broad, flat projection partly hiding the otherwise distinct umbilical chink; axis not much twisted, but the columella is slightly thickened and in many specimens the inner lip is appressed so as to form a rather well-marked plait, the umbilical chink varies greatly in size, the surface of the shell is often malleated.

Length, 17.0; diameter, 11.0; aperture length, 10.5; diameter, 6.2 mm. Holotype.

Length, 16.5; diameter, 11.0; aperture length, 11.1; diameter, 6.0 mm. Paratype.

Length, 16.2; diameter, 10.0; aperture length, 10.0; diameter, 6.7 mm. Paratype.

Type locality: Madeline Island, near Bayfield, Bayfield Co., Wisconsin. Types in Mus. Univ. Wis., No. 4695; paratypes, Mus. Univ. Ill., No. 19437, Phil. Acad. Sci. No. 140268.

Remarks: *Walkeriana* resembles both *catascopium* and *emarginata angulata*. It is comparatively wider than *catascopium*, is (usually) umbilicated, has a shorter, broader spire and more tumid whorls. The columella is quite different, being broader, erect, and lacking the plait and twist of that species. It may be known from *angulata* by its more regularly ovate shell, more pointed spire, more ovate and less rounded aperture, and less rotund body whorl. *Angulata* is also larger and heavier than *walkeriana*. It more closely resembles *emarginata ontariensis*, which, however, has a thicker shell of a different color and texture, a longer, more pointed spire with flat-sided whorls, a more compressed body whorl, and a differently shaped inner lip.

A restudy of *binneyi*, *apicina*, and *solida* leads the writer to change completely the opinion given in the Monograph of the Lymnaeidae concerning these species. *Binneyi* is a river species, its type locality being the Hell Gate River, Montana, which is a tributary of the Columbia River, hence the Pacific drainage. All authors have confused several species with the true *binneyi*, which should be restricted to river forms conforming to the diagnosis and figure of Tryon in the Journ. of Conch., p. 229, pl. 23, fig. 3. This is different from the lake shells under consideration, which all have a short spire and a differently shaped aperture. The two type specimens of *binneyi* in the Philadelphia Academy (No. 58506) are like Tryon's description and are different from the shell of the Great Lakes.

The reference of certain Michigan lake shells to *apicina* by the writer in the Lymnaea monograph is also erroneous. They have only a superficial resemblance to the types of the western form and it is now believed that *solida* and *apicina* as a synonym, should be restricted to the region west of the Rocky Mountains, the Pacific drainage. This is a river species and obviously would be different from a typical Great Lake species.

The lake forms previously referred to *binneyi* and *apicina*, for both forms referred to these species are variants of the same thing, should apparently be separated from all other species of the lake region and they are accordingly recognized under the name of one of America's distinguished students of the Mol-

lusca, Dr. Bryant Walker. The reference of these lake shells to another species removes an apparent anomaly in the distribution of the west coast forms to which they have been referred and brings them more in accord with our present knowledge concerning the ecological distribution of species in lakes and rivers.

MOLLUSCS FROM THE MANITOBA--ONTARIO BOUNDARY

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The species noted below were collected during the years 1923-25 in the vicinity of the boundary between the southern portions of the provinces of Manitoba and Ontario, Canada. This district is near the western border of the Canadian Zone in southern Manitoba, and outcrops of Pre-Cambrian rocks form the most striking geological feature. The area is treed principally by conifers. Due to irregularities of relief thousands of small lakes have formed. As has been pointed out by Bensley (2) many of the lakes of this Archean area have a high content of organic detritus, and often have their waters discolored by vegetable extracts till they resemble weak tea. The area in which the collecting was done lies wholly within the Hudson Bay drainage system. The Winnipeg River with its connecting waters, including the English River, the Lake of the Woods, and Shoal Lake, forms, when its fauna is considered, a distinct section of the Nelson River portion of this northern drainage. Very few molluscs have been collected in this district, the only previous records being those of Binney (3 & 4), Dall (5), Hanham (6) and Mozley (8). The records of Adamstone (1), Robertson (10), and Whiteaves (12-15) while from closely similar habitats do not relate to the same drainage system. This list includes thirty-three species of which only four have been previously recorded from this area. In addition there are three species the precise identity of which has not been ascertained, but which are distinct from the others mentioned. A collection